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Competence of adapted physical educators toward young children with disabilities

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COMPETENCE OF ADAPTED PHYSICAL EDUCATORS TOWARD YOUNG CHILDREN WITH DISABILITIES

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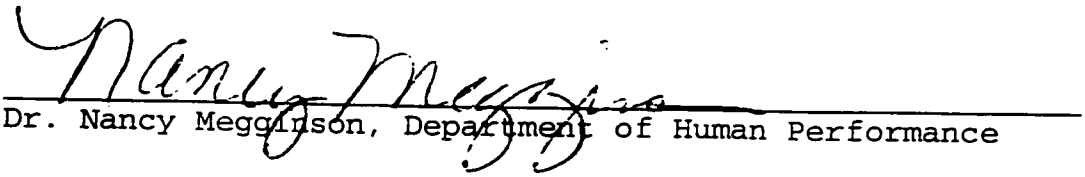

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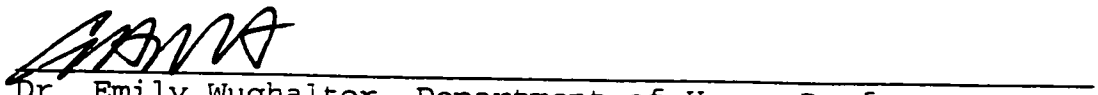

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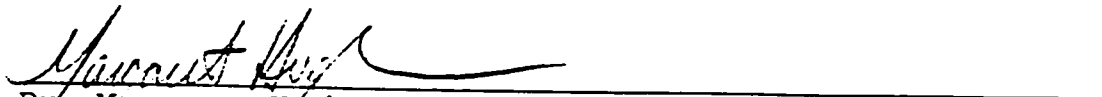

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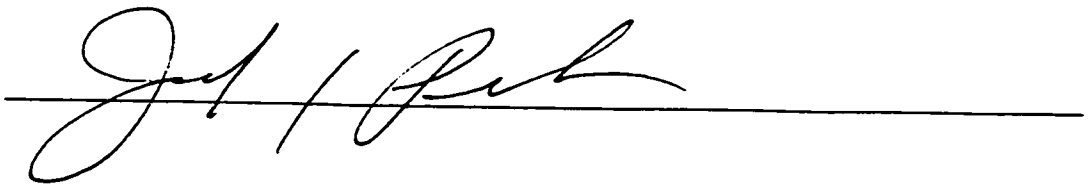

ABSTRACT

COMPETENCE OF ADAPTED PHYSICAL EDUCATORS TOWARD YOUNG CHILDREN WITH DISABILITIES

by Inbar Levin

Few scientific studies have examined the perceived level of competence Adapted Physical Education (APE) specialists have toward delivering services to infants, toddlers, and preschoolers with disabilities. The purpose of this research study was to determine the current perceived level of competence adapted physical education specialists' possess toward their service delivery to infant, toddler, and preschool children with disabilities.

A survey was distributed to 350 APE specialists; 50 surveys were returned at the conference time and via U.S. Postal service. Four main areas of knowledge emerged that APE specialists identified as necessary in order to be able to serve the infant, toddler, and preschool population. These were Scientific Knowledge, Counseling Resources, Medical Issues, and Motor Development Knowledge. According to the study, the APE specialists indicated that their training in these areas did not provide adequate knowledge to deliver appropriate services to the infant, toddler, and preschool population with disabilities.

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CHAPTER 1

Introduction

The Adapted Physical Education specialist (APE) who serves the infant, toddler, and preschool population with disabilities should be part of the transdisciplinary team focused on early intervention. Intervention services for this age group are beneficial in the short term but also function to minimize potential difficulties associated with disabilities later in life (Eason, 1991).

Infant, toddler, preschool APE is an evolving profession, in the early stage of its development. Kelly and Rimmer (1989) and Burton (1993) were early studies that demonstrated the benefits of gross motor development teaching by APE specialists to the preschool age group. This is the first true decade for the infant, toddler, and preschool APE profession, and thus research on roles and qualifications is sparse, as is an awareness of the services provided in this relatively new field. The purpose of this research study was to determine the current perceived level of competence adapted physical education specialists' possess toward their service delivery to infants, toddlers, and preschoolers with disabilities.

Gross motor development should be an integral part of

the infants, toddlers, and preschoolers' special education curriculum, and it can be delivered through structured or unstructured methods. A transdisciplinary team, working in collaboration with the family, must first do evaluation and assessments for early intervention (Committee on Children with Disabilities, 1999). This team is responsible for designing the Individualized Family Service Plan or Individualized Education Program that has specific educational and therapeutic strategies, goals and objectives (Committee on Children with Disabilities, 1999).

Members of the infants, toddlers, and preschool transdisciplinary team might include special educators, social workers, psychologists, speech therapists, occupational therapists, physical therapists, and/or infant, toddler, preschool APE specialists. The occupational therapist, physical therapist, and infant, toddler, preschool APE specialists are specifically involved in select elements of gross and fine motor development and should work collaboratively with one another to support the program goals/objectives for each discipline (California Department of Education, Special Education Division, 2000).

The primary goal of the occupational therapist is to work in the fine motor domain. An occupational herapist works with children who have motor delays or motor impairments to improve fine motor skills with particular emphasis on eye-hand coordination and manipulation, as well as sensory integration (Bowe, 2000). Physical therapists provide services to infants who have gross motor delays and/or who have difficulties with walking, muscle tone, and postural control (Bowe, 2000).

APE specialists work with people of all ages to help master the movement skills needs for daily living. They deliver remedial services to ameliorate problems in the psychomotor domain and to address psychomotor strengths and weaknesses of individuals with disabilities (Sherrill, 1998). APE specialists are the most probable candidates to provide assessment and direct motor development services to the infant, toddler, and preschool age group. Because of the developmental functioning level of young children, more specialized competencies are required than when serving an older population (Lytle, 2000).

APE specialists must have knowledge of normal and abnormal motor development. They also need to know

curriculum and judgment based assessment techniques, appropriate response-contingent toys/materials for sensory stimulation, as well as strategies for relaxation, socialization, and play behavior. APE specialists must also be trained in motor development and curriculum sequences that include tone, strength, and muscle control. Above and beyond all of this knowledge and training, APE specialists must also be knowledgeable and mindful of the philosophies of the medical and educational models of service delivery (Cowden & Torrey, 1995).

Within the discipline of adapted physical education, the emerging specialty area of infant, toddler, and preschool APE services enables its professionals to work effectively in the motor domain of this age-group population with disabilities or developmental delays (Cowden & Torrey, 1995).

Unlike APE specialists working with children over the age of five, the infant, toddler, preschool APE specialist would be the key member of the transdisciplinary team responsible for assessment in the motor domain (Cowden & Torrey, 1995). Professionals in APE, serving the infant, toddler, and preschool population with disabilities, have a

lower perceived level of competence than their colleagues serving children over the age of five (Cowden & Torrey, 1995). Children benefit from the efforts of a transdisciplinary team. When the services of an occupational therapist or physical therapist are needed, they will work collaboratively with the infant, toddler, and preschool APE specialist. This approach can help focus on the specific needs of the child with disabilities or developmental delays thus improving the coordination of all forms of service and care for children and their families (Blackman, 1991).

Problem Statement

The purpose of this research study was to determine the current perceived level of competence adapted physical education specialists' possess toward their service delivery to infant, toddler, and preschool children with disabilities.

Tasks Completed

1. In this study the concept of early intervention and the role of the infant, toddler, and preschool APE specialists involved was examined.
2. A *Infants, Toddlers, and Preschoolers APE Standards*

Survey developed by Megginson and Morgan (1996) was modified to fit this study. The survey was developed based on infant, toddler, and preschool APE standards listed in Cowden and Eason (1991) and field-tested with APE specialists. It was distributed to professionals, who agreed to participate in the survey, who attended the 30th National Conference on Physical Activity for the Exceptional Individual held in Los Angeles, November 8-10, 2001.

Limitations

The data were collected at the 30th National Conference on Physical Activity for the Exceptional Individual held November 8-10, 2001, in Los Angeles California. Thus, participants were limited to the people who choose to attend this particular conference. It was expected that most attendees would be associated with the adapted physical education profession and a majority of them would reside in California. There was no control for their dispersion across the state.

Delimitations

To acquire a variety of perspectives, it was decided that the sampling would not be limited only to the infant,

toddler, and preschool APE specialists attending the conference, but would be expanded to include any APE specialists at the conference. This would lend a broader perspective to the research, but would still keep the sample based on field experiences and expertise.

The National Conference on Physical Activity for the Exceptional Individual is held every year in California. The results of the study should not be generalized beyond California, because the situations for APE professionals in California are not necessarily reflective of the situation in the rest of the country.

Definition of Terms

Motor Development

Motor development is the change in movement behavior from birth throughout adulthood. Motor skills can be classified as gross or fine motor (Payne & Isaacs, 1998).

Gross Motor

Gross motor is a term that refers to the large muscles or muscle groups that primarily control movement (Payne & Isaacs, 1998).

Fine Motor

Fine motor is a term that refers to the small muscles

or muscle groups that control movement (Payne & Isaacs, 1998).

Developmental Delays

Developmental delay is a generic term used by federal legislation to permit states to establish the criterion for considering performance to be below average (Sherrill, 1998). Developmental delays are lags in any of a child's developmental domains: cognitive, communication, physical, adaptive, social, and emotional (Bowe, 2000). According to the State of California Early Start Statutes and Regulations (2001), developmental delay exists if there is a significant difference between an infant's or toddler's current level of functioning and the expected level of development for age in one or more of the following developmental areas: cognitive; physical (including fine and gross motor, vision, and hearing); communication; social emotional; and adaptive.

At Risk

The term "at risk" is used to refer to children who are not exhibiting developmental delays, but for whom biological or environmental reasons are more likely to have developmental delays (Bowe, 2000). The term "at risk"

refers to children who have been exposed to adverse prenatal, or postnatal factors that will most likely cause delays before of three years (Sherrill, 1998).

Early Intervention

Early intervention services address the specific needs of each child who has disabilities, developmental delays, or is at risk for developmental delays, beginning at a very young age (Bowe, 2000).

Transdisciplinary Services

Transdisciplinary services are services provided by different specialists trained in different disciplines, who work together in a team to help children and families (Bowe, 2000). In the transdisciplinary team, the communications between the team members has a direct impact on the efficiency and the quality of the services they are delivering (McLean, Bailey, & Wolery, 1996).

Individualized Family Service Plan (IFSP)

The IFSP is a written document, outlining services for children (only applicable to infants and toddlers birth to three years of age) and families. The IFSP document notes a child's developmental age levels in the five developmental domains, family information, outcomes, the services a child

and the family will receive, dates, case manager name, and transition plan for services after three years (Bowe, 2000; Sherrill, 1998).

Individualized Education Program (IEP)

The IEP is a written document that identifies the needs of a child (aged three years to 22 years). The document includes a child's present performance level, annual goals and short-term objectives, a list of the special education and related services that are to be provided to meet unique educational needs. The IEP document also includes a description of how a child's progress will be assessed, the date of initiation of services, and the projected duration of those services (Bowe, 2000; Sherrill, 1998).

Importance of the Study

The APE specialist's role in infants, toddlers, and preschoolers service delivery is still in its formative stages. As such, the training, tools, and skills of this role need to be better understood and clarified so that the intervention services provided by infants, toddlers, preschool APE professionals will be effective for infants, toddlers, and preschool children with disabilities.

According to Cowden and Eason (1991), there are four main areas of knowledge that are important to the infant, toddler, preschool APE specialist in order to deliver their services to this population appropriately. Those four domains are 1) legal and public policy; 2) scientific knowledge base and assessment principles; 3) perspective and curriculum skills; and 4) family counseling and consulting. A list of 25 standards of professional knowledge (Appendix F) to those four domains was proposed, but those standards still need to be studied and refined. Using these proposed standards as a starting point, this research was intended to provide a clearer understanding of the infant, toddler, preschool APE specialist' role, skills, tools, and training in order to deliver services to the birth to five age group population with disabilities effectively.

CHAPTER 2

Review of Literature

The infant, toddler, preschool APE specialist is part of a transdisciplinary team focusing on early intervention for children with disabilities. The purpose of the study was to better understand the role of the infants, toddlers, preschoolers APE profession, and to identify training and qualifications needed by APE specialists to extend service delivery to infant, toddler, and preschool children with disabilities. This chapter will focus on the job responsibilities of the infant, toddler, and preschool APE specialist. This profession is still in its first decade and research is sparse, as is awareness of the services provided in this relatively new field.

This chapter will first examine concepts of early intervention; roles of specialists who deliver services for infant, toddler, and preschool children with disabilities; and the law which mandates these services.

Federal Legislation and Adapted Physical Education

Research, supported by the federal government in the past 20 years, on the effectiveness of early intervention with young children with disabilities and their families

demonstrates that if children with disabilities and their families receive support services as early as the need is apparent, it can prevent developmental delays. These developmental delays may, later in life, result in more costly services and greater length of delivery. The research also shows that early intervention for developmental delays results in several benefits. Primarily, the developmental delays are not as profound in later life if service begins before the age of six. The early intervention model reduces stress for the family, and prepares them to function and understand the child more easily. Children and families are generally better prepared to contribute to their communities because of early intervention (Martin & Connor, 1991).

Adapted physical education is a special education service mandated by the federal act, Public Law (PL) 94-142, "Education for All Handicapped Children Act" of 1975. This law requires that "all children with disabilities receive a physical education program designed to meet individual and specific motor needs" (Martin & Connor, 1991, p. 138). The law defines special physical education as the development of physical and motor fitness,

fundamental motor skills and patterns, and skills in aquatics, dance, individual/group games and sport (Federal Register, 1977). By the school year 1990-91, all the rights and protections of the law were extended to children aged three through five years (Martin & Connor, 1991).

"The Education of the Handicapped Act" from 1975 definition of special education is: "Special education means specially designed instruction, at no cost to the parents or guardians, to meet the unique needs of the exceptional child, including classroom instruction, instruction in physical education, home instruction, and instructions in hospitals and institutions." (Federal Register, 1977).

PL 99-457 "The Education of the Handicapped Act" was an amendment to PL 94-142, signed into effect in 1984 (Federal Register, 1984). This law provided federal assistance to state and local education agencies to meet the special educational and related service needs of children and youth with disabilities (Churton, 1988).

Recognizing the importance of early intervention, the federal government enacted PL 99-457 to extend educational services to infants, toddlers, and preschoolers that are

developmentally delayed, at risk, or have an established disability (Federal Register, 1984). Today, the Individuals with Disabilities Education Act (IDEA) amendment, PL 105-17, from 1997 (Federal register, 1997), provides state grants for the purpose of extending early intervention services for infants and toddlers (birth to 2 years old) with disabilities who are eligible for services as defined in the legislation. There is also a specific formation of an Individual Family Service Plan required for these services. The family service planning process consists of written documents developed on the basis of a multidisciplinary evaluation of an infant/toddler's needs. The Individual Family Service Plan, because of its unique requirements, is used as a key mechanism in the design and delivery of quality services for the child and his or her family. The Individual Family Service Plan consists of seven components. First, assessment of the child's present levels of development in all the domains (cognition, speech, motor, self-help and psychological). Second, a statement of the family's needs related to enhancing the child's development. Third, a statement of major outcomes expected to be achieved for the child and family. Fourth,

the criteria and timeline for determining progress. Fifth, the specific services required meeting the unique needs of the child, including methods, frequency and intensity. Sixth, the projected dates for the initiation of services and expected duration. Seventh, the name of the case manager and procedures for transition from early intervention services to the preschool that will continue to meet the child's needs after age three years (Martin & Connor, 1991).

According to Cowden (1991), the APE specialist is the most prepared professional to serve young children with disabilities in the motor development area. That is why the APE specialist should be a member of the transdisciplinary, interagency services provided by early intervention. The "challenge is to incorporate the role of adapted physical educator in the development of the Individualized Family Service Plan" (Cowden, 1991, P. 38).

According to Martin and Connor (1991), another extension of PL 94-142 is Section 619 that creates the right to a free and appropriate education for children beginning at age three years. At three years, according to Part B of the law, the Individualized Education Plan

addresses children's needs. This education plan is similar to the Individual Family Service Plan with the primary difference between them being that the Individualized Education Plan is focused on the child and the Individual Family Service Plan is focused on the family unit. Related to the three and above age group, PL 94-192 and its amendments made parental instruction an allowable cost rather than being limited to services delivered directly to the child by a professional.

According to PL 94-142 and its amendments (addressing needs of children with disabilities), mandated physical education services and that they may be specially designed (if necessary). As a result, children three to five years of age, with disabilities must participate in physical education. These laws created a major role and responsibility for APE specialists, especially for those serving the infants, toddlers, and preschool population. Another important role for the APE specialist is to contribute information to the transdisciplinary evaluation and thus help determine the child's eligibility for services. This role is performed along with the occupational therapists and the physical therapists (Martin

& Connor, 1991).

According to Martin and Connor (1991), infant, toddler, and preschool children with disabilities service delivery can be done following three different approaches. In the home-based approach, the APE specialist is working with families to develop a parent motor development-training program. In the center-based approach, the child comes to the program, and the APE specialist works directly with the child. The third approach combines the home-based program and the center-based program.

PL 101-476, the Individuals with Disabilities Education Act (IDEA) established in 1997 (that came as an amendment to PL 94-142, Section 632, Subsection 4), defines early intervention services as developmental services provided by qualified personnel (California Department of Education, Special Education Division, 2000). In Section 635, Subsection 9, the law requires standardized policies and procedures, and, appropriately, adequately trained and well prepared professionals. The law allows the states to determine whether an individual is qualified to deliver early intervention services. The law also recognizes that professionals, who are qualified to deliver the services to

infant, toddler, and preschool children with disabilities, may have different qualifications than those who serve other age groups (California Department of Education, Special Education Division, 2000).

The passage of the above mentioned laws, most especially PL 99-457, created a need to clarify and define the roles of professionals and their techniques in preparing to serve infants, toddlers and preschoolers. The anticipated growth of early intervention programs and increasing demand for qualified early intervention professionals are factors forcing service delivery systems, state agencies, professional associations, and institutions of higher education to examine the adequacy of personnel preparation in multiple disciplines (Bailey, Simeonsson, Yoder, & Huntington, 1990).

Effect of Early Intervention

According to Cowden and Torrey (1995), early intervention programs have a major impact on children's developmental potential and on the functioning of families. Initial patterns of learning have subsequent influence in all the domains. At early ages, there are certain sensitive learning periods recognized as having a significant impact

on the child's development. Cognitive, psychomotor, and affective learning are shaped by the teaching process and by environmental influences. It is a widely held belief that motor development typically progresses quickly in the first few years of life. This is why it is critical for young children to have appropriate experiences in the motor domain in the early months and years of their development (Cowden & Torrey, 1995).

Early intervention programs are designed to facilitate the acquisition of developmentally appropriate skills by infants with disabilities and to foster positive relationships with their families. As mentioned before, these programs can occur either at home with the parents playing the role of the interventionists, or in centers where the infants and toddlers interact with both program staff and the parents (Odom, Yoder, & Hill, 1988).

Parental involvement is an important factor in the success of early intervention programs. Shonkoff and Hauser-Cram (1987) found positive effects of parental involvement in early intervention programs. Parents are an integral part of a young child's life. The family is the ecological system to the child, and they are most critical

to the child's optimal development (Hamilton, Goodway, & Haubenstricker, 1999).

Early intervention programs have a range of purposes that are based on a unique rationale. For some early intervention programs, the most important purpose is prevention of eventual developmental delays. For others, the purpose of the program is to effect changes directly in behaviors, development, or relationship with the caregivers. There are also programs with the specific purpose to effect change in the family system in order to create positive changes in the child's environment (Odom et al. 1988).

Motor development intervention should be a critical part of all early childhood special education programs. The goal of physical education programs that provide services for infant, toddler, and preschool children with disabilities is to help them improve overall gross motor development, master critical motor skills, and develop an understanding of movement concepts (Block & Davis, 1996).

Motor Development Verses Atypical Motor Development

Motor development is defined as the changes in motor behavior and movement competencies through the lifespan and

development from infancy to adulthood. It involves aspects of human behavior on movement development and how movement development affects behavior (Payne & Isaacs, 1998).

Everything a young child does is affected if the child's physical development does not develop as it should. The "work" of young children is to develop their abilities by exploring their environments, finding objects and items, and manipulating them (Bowe, 2000).

Motor skills can be classified as two types: gross motor development, in which movement is primarily controlled by the large muscles or muscle groups; and fine motor development, in which movement is governed by small muscles or muscle groups. Babies typically develop gross motor skills first, and then fine motor skills (Payne & Isaacs, 1998).

Motor development is directed by the maturation of the nervous system, individual genetic coding, handling, and environmental experiences. Motor skills develop from the head to the toes (cephalo-caudal); proceed from proximal to distal, and from gross motor to fine motor movements (Bly, 1983).

Typically, developing babies are very active. They

repeat a movement over and over and so develop awareness of the sensation of the movement (Bly, 1983). Newborn movements depend on the forces of gravity, which inhibit or excite certain reflexes (Corbetta & Mounoud, 1989). A newborn is able to right the position of head, trunk, arms, and legs in relation to each other, but he is almost completely unable to make a movement whose goal is to oppose gravity (Peiper, 1963).

Except for primitive reflexes, like sucking and grasping, a newborn has no control over the arms and the legs. These reflexes originate in the only part of the brain that is fully functioning at birth, the cortex. As the cortex of the brain develops, between the fourth and seventh months, these reflexes become inhibited. The primitive reflexes seem to disappear, thereby allowing an increasingly sophisticated progression of motor skills to develop and take their place (Wingert & Underwood, 1997).

In order for that process to happen, the brain must learn to deliver commands to the muscles. For this neurons must be myelinated. Myelination keeps electrical signals traveling along a neuron, and also prevents the electrical signals in one neuron from interfering with those of others

nearby. Along with the myelination process the rapidly maturing brain is forming and priming synapses, which are junctions between neurons, creating well-organized networks. Not until the age of two years are all of a child's nerves fully myelinated. The baby learns by repeating every new movement over and over to strengthen the neural circuits that wind from the brain's thinking areas into the motor cortex and out to the nerves that move muscles (Wingert & Underwood, 1997).

As the baby's neuromuscular and sensory systems mature, around one to two months of age, the baby gains some control over the wayward body. The baby cannot develop hand-eye coordination and balance, which are prerequisites for crawling and walking, without a steady visual field. At around 8 months, the baby will prop up on the forearms. The baby will gain control of upper arms before lower arms, and wrists before fingers (Wingert & Underwood, 1997).

By using the muscles repeatedly, the babies develop strength and elasticity known as "muscle tone," which is important in producing intentional movement. With muscles and coordination working well together, babies can start working on more demanding motor skills, like sitting and

crawling, which require strength and balance. The leap to walking demands on physical and conceptual abilities (Wingert & Underwood, 1997).

Each posture invokes a particular kind of coordination between perception and action. Different body positions involve different muscle groups, different patterns of coordination among limbs, different vantage points on one's surroundings, and different combinations of visual and sensory cues about balance (Bower, 1999).

Atypical motor development or motor development delays result when a child has abnormal muscle tone. It can be spasticity or hypertonus, when the muscle tone is too tight, causing contractures or spasm. It can be athetosis, or mixed muscle tone, when the body parts are in constant purposeless motion. It can also be paralysis or atonus, or paresis and hypotonus, which is weakness caused by partial paralysis or muscle deterioration (Payne & Isaacs, 1998).

According to Benelli and Yongue (1995), physical and motor development of children influences, and is influenced, by all other aspects of development: cognitive, language, environmental, and social-emotional. Children need many opportunities and practice to refine motor

skills.

Acredolo, Adams, and Goodwyn (1984), and Bremner and Bryant (1977) state (as cited in Yan, Thomas, & Downing, 1998) that Motor activities have a positive effect on facilitating children's cognitive development. Motor training also appears to affect spatial cognitive development (Yan, et al. 1998).

Environmental factors such as culture and gender can also influence the child's motivation and subsequent participation within the physical domain (Meaney, Hayashi, & Griffin, 2000). Failure to achieve fundamental motor skills can have long-term negative effects on children. The lack of these skills may prevent them from joining and playing with other children (Benelli & Yongue, 1995). Children acquire self-confidence and self-esteem as a result of successful experiences in the motor domain (Bunker, 1991).

The development of motor skills has different benefits, such as the fulfillment of children's need and desire for movement and that exercise builds muscles, strengthens the heart, and enhances aerobic capacity. Repeated practice, according to Benelli and Yongue (1995),

helps develop attention spans, and Cognitive learning takes place through motor activities. Benelli & Yongue (1995), also state that for the preschool age group, motor activities can also help to develop language and promote social skills through games, and the interactions engaged in during these games.

Physical and social aspects of the home environment are also important factors influencing infant development. Parental expectations, socioeconomic status, and infant behavior may be related in different ways to a child's motor development. Cross-cultural studies often support those factors (Abbott & Bartlett, 1999).

Children need motion and movement not only to develop their bodies, but for the development of the whole child in all of the developmental domains (Benelli & Yongue, 1995). Benelli and Yongue (1995) also reported that when children are healthy and functioning well they are able to react to space and location in it, assume a variety of body postures, and develop and refine fundamental motor skills.

Through physical skill development, children explore their capabilities and learn about themselves and their environment (Bunker, 1991). For children with gross motor

delays or abnormal tone, the physical therapist can work 'hands on' to facilitate stability of the body. They also work on typical movement and new movement patterns, help keep joints moving freely and aligned in their best position, help with proper positioning, and determine motor activities for home or in the classroom.

Occupational therapists work with developmentally delayed children to improve fine motor development, hand-eye coordination, and manipulation of objects. This will enhance play skills and increase self-care functions. Occupational therapy is also provided when sensory integration issues are present. This is done through the use of 'occupation' or purposeful activity (Case-Smith, 1996).

Specific techniques for treatment may include special activity adaptation strategies such as changing the position of the child's body or the work/play surface, direct sensory stimulation, or modification of the task such as breaking it down into a step-by-step progression of skill development (Case-Smith, 1996).

The Role of the Infant, Toddler, Preschool APE specialist

The infant, toddler, preschool APE specialist's role

is versatile, qualified to address curriculum, goals and objectives, and to make modifications to the Individual Education Plan. This professional can address the motor needs of infants and toddlers with disabilities, and serve on transdisciplinary teams. The infant, toddler, preschool APE specialist can also assist in conducting needs assessments and interest inventories, provide advice to other team members or to the transition team, and conduct physical training in a community based setting (Nolan & Duncan, 1998).

The specific implications for the discipline of APE are: first, to illustrate the need for intense transdisciplinary early intervention for infants, toddlers and preschoolers with disabilities; to suggest that the traditional responsibilities of APE specialists (development of movement and gross motor skills) have an integral role in the early intervention process (Eason, 1991).

The infant, toddler, preschool APE specialist will usually work as a member of a transdisciplinary team under the direction of the early interventionist and, with additional training, can also qualify for the

interventionist role (Eason, 1991). The role of APE specialist, according to Cowden and Eason (1991), is divided into seven phases.

1. Prevention - APE specialists provide both the knowledge and the effective values that will result in a lessening of factors that lead to disability in infants and toddlers. Prevention, although indirect, may be the most important function for the APE on the transdisciplinary team. Prevention also has implications for infants and toddlers who are born at risk, are developmentally delayed, and/or are disabled, who without that intervention will be less capable of accomplishing basic skills.

2. Screening and Assessment - Because of the shortage of trained professionals in all disciplines that comprise the transdisciplinary team, APE professionals should become more involved in the screening and assessment components of the early intervention process. The infant, toddler, preschool APE specialist needs to be familiar with infant and toddler assessments, such as the Early Intervention Development Profile, the Battelle Developmental Inventory, the Bayley Scales of Infant Development and more (Eason, 1991).

3. Curriculum Design and Modification - more than expanding the current skills of APE specialists to the infant, toddler, and preschool population, new techniques will be required. For example, they will need to develop new curricula or modify existing ones to suit this age group.

4. Program Implementation - Once a curriculum has been developed, intervention services may begin.

5. Consultation and Coordination - the APE specialist consults with parents and other direct service providers concerning motor activity prescriptions. Additionally, the APE specialist must coordinate the services provided by other professionals related to self-help skills, adaptive behaviors, and gross motor development.

6. Research - APE specialists should be able to answer field-based pragmatic research questions such as: What are the most effective techniques for preventing motor dysfunction? And what are the benefits of early intervention?

7. Administration - The significance of the criteria list for APE specialists is to reinforce the extent and scope of the problem and the importance of a

transdisciplinary team. Because of the increasing number of children needing these programs and the shortage of trained professionals to provide the services, the APE professional must be both an integral part of direct service provision and a consultant to parents and other professionals.

In the draft of adapted physical education guidelines, (The California Department of Education, Special Education Division, 2000), some of the adapted physical education services for infants and toddlers with disabilities were listed:

A. The adapted physical education specialist meets the parent and child at the playground with developmentally appropriate equipment to give suggestions and demonstrate fun, play activities that will support the child's development of mobility and body awareness skills.

B. The adapted physical education specialist goes to a center based infant/toddler program to demonstrate activity based motor instruction to the center staff.

C. The adapted physical education specialist observes the child while engaged in motor

activities at the park, home, or childcare center to monitor progress in the application of motor skills to play, mobility, and personal care activities.

D. The adapted physical education specialist, occupational therapist and physical therapist collaborate to provide an assessment of motor skills for a toddler in preparation for transition to a preschool program. The occupational therapist and physical therapist assess specific motor skills in a clinic setting. The adapted physical education specialist assesses the child's motor skills during regular activities in a natural environment. (p.45)

Cowden and Eason (1991) developed what they called pediatric adapted physical education competencies that were generated from information gained from letters of inquiry submitted to randomly selected members of the National Consortium on Physical Education and Recreation for the Handicapped. The list includes 25 competencies that are recommended for a properly prepared infant, toddler, and preschool APE specialist (Appendix F). The 25 competencies

divided into four categories: legal and public policy; scientific knowledge base and assessment principals; perspective and curriculum skills; and family counseling and consulting.

Megginson and Morgan (1996) developed a 29-item survey depicting the fundamental professional competencies associated with pediatric adapted physical education (infant, toddler, and preschool aged children). These competencies were derived and modified from the Cowden and Eason (1991) 25-item pediatric adapted physical education competencies. Megginson and Morgan questioned if these competencies were valid and representative of their assigned categories. It was their intent to develop an instrument that could be used in ascertaining the in-service and pre-service training of adapted physical educators in the area of pediatric adapted physical education.

The Importance of the Adapted Physical Education Specialist Role

Many professions are providing services to young children with disabilities. The APE specialist plays an important role in providing services to children with motor

disabilities. Two studies show the importance of the APE specialist role.

Burton (1993) compared activity time of preschool children with learning disabilities in mainstreamed physical education and adapted physical education classes. His results indicated that students receiving physical education in an adapted setting exhibited significantly more "on-task-active" behavior than students in the mainstreamed PE setting did. The students in the mainstreamed PE setting exhibited significantly more "on-task-inactive" and "off-task" behaviors.

Kelly and Rimmer (1989) descriptively evaluated the effects of three programs on the development of gross motor skills of preschool children with learning disabilities. The programs were gross motor development teaching by occupational therapy, adapted physical education specialist, and non-instructional program. The results revealed first, that instruction in the form of structured programming (using APE specialist or occupational therapist) appeared to have a greater impact on the development of select motor skills than does the free play. Second, quantitative changes in performance are not

necessarily indicative of qualitative improvements in skill development. Finally, the most important conclusion was that instruction provided by a trained APE specialist resulted in a greater number of significant gains across objectives and particularly on the qualitative measures.

Conclusion

Early intervention programs, as shown in this chapter, are a very important part of the lives of infant, toddler, and preschool children with disabilities. In these programs, a variety of professionals are involved in service delivery: special education teachers, occupational therapists, physical therapists, speech-language pathologists, and APE specialists.

Research studies, researchers, and specialists in this area have come to different conclusions about the role of each of the specialists involved in such programs. Most of them, however, do agree on the importance of the role played by the APE specialist.

The APE specialist has many roles: prevention, assessment, modification, program implementation, consultation, and coordination. The role of teaching physical education with the necessary individualized

adaptation fulfills all of these roles. The most effective approach appears to be the Activity Based Intervention approach.

After exploring the role of the APE specialist, it is easier to understand the crucial part played by this specialty within the model of early intervention for infant, toddler, and preschool children with disabilities.

CHAPTER 3

Method

The purpose of this study was to better understand the role of the infant, toddler, preschool APE profession, and to identify training and qualifications needed by APE specialists to extend service delivery to infant, toddler, and preschool children with disabilities.

Participants

The purposive sample for this study came from adapted physical education professionals who attended the 30th National Conference on Physical Activity for the Exceptional Individual that was held November 8-10, 2001, in Los Angeles, California. All attendees of this conference were professionals who have major responsibilities and/or interest in the physical activity programming of individuals with disabilities. This conference attracts professionals from all over the nation, but primarily from the state of California. It was anticipated that the participant sample would represent a wide spectrum of age, adapted physical education specialization, years of professional experience, and age groups served.

Instrumentation

Megginson and Morgan (1996) developed a survey listing the 25 infant, toddler, and preschool APE specialist competencies along with demographic questions. The survey was piloted at the 1992 National Conference on Physical Activity for the Exceptional Individual to 102 APE specialists. A Varimax-rotated factor analysis demonstrated three, not four as originally mentioned by Cowden and Eason (1991), main factors (legal and public policy; scientific knowledge base; and family counseling/consulting) from the data and that 29 competency items were derived from the 25 identified by Cowden and Eason (1991).

The Megginson and Morgan (1996) survey was used for the purpose of this study. The instrument encompasses the select infant, toddler, and preschool competencies, outlined by Cowden and Eason (1991), necessary for an adapted physical education specialist to serve this age-group population. The demographic questions addressed age, gender, the educational degree of the participant, current professional assignment, years of experience working as APE specialist and age group served.

The *Infants, Toddlers, and Preschoolers APE Standards*

Survey contained a total of 32 items, and was designed to use a five point Likert scale to rate the skills and knowledge level of the APE specialist's perceived level of competence in providing services to infants, toddlers, and preschool children with disabilities. The competencies have been categorized in to three sections. Five items were designed to inquire about the legal and public policy knowledge base of the participant. Eighteen items queried the scientific Infants, Toddlers, Preschoolers knowledge base and skills, and an additional nine items were about family counseling and consulting knowledge base and skills.

Several aspects of the original survey (Megginson & Morgan, 1996) were modified for the purpose of this study. Additional items were added to address the level of interest participants had in providing services to the infants, toddlers, and preschool age group, and the general level of training participants had specific to delivering services for this age group. In addition, one item was updated to refer to the recent law amendment from 1997. All sections were updated to determine knowledge and skills levels, not just knowledge level alone. Some additional changes were made to the syntax of the items, to improve

their clarity.

Procedures

The San Jose State University, prior to the beginning of the study, approved a Human Subjects review for the protection of Human Subjects. A survey packet including a cover letter, consent form, and a copy of the survey was distributed to the participants upon their arrival to the conference. The cover letter outlined the purpose and importance of the study, and emphasized that participation was voluntary, but very much appreciated. The consent form stated that the participant acknowledged that the survey would be used for this study, but that the answers would be kept anonymous and confidential (Appendices A and B).

To ensure a high response for the study, the length of the survey was kept to a minimum. The two days of the conference were provided to allow participants time to answer the survey, and to ask any questions they had regarding the survey.

The participants placed completed surveys into one of two locked red boxes located next to the dining room entrance. These boxes were available throughout the two days of the conference.

Analysis of Data

Descriptive statistics, including frequency distributions, were developed using the demographic and perceived competence rating data. In addition, a Varimax-rotated factor analysis was utilized to confirm the competence content structure of the participant's item ratings. All data were entered and analyzed utilizing the Statistical Package for Social Science (SPSS) software.

CHAPTER 4

Results

This chapter includes a description of the study results presented as follows: descriptive statistics of the demographic data, descriptive statistics of the perceived competence rating data, and factor analysis of the perceived competence rating data.

The Study

The *Infants, Toddlers, and Preschoolers APE Standards Survey* was included in the participants' and speakers' conference packets distributed during the 30th National Conference on Physical Activity for the Exceptional Individual. Three hundred and fifty surveys were distributed. Fifty surveys were returned (approximately 14%). Forty-five of them were returned to the designated return site (red boxes) at the conference and five of them were mailed to the researcher's home by United States Postal Service.

The survey utilized a 5-point Likert-type scale for scoring. Participants were asked to rate their knowledge on a given item using one to represent the poorest level of knowledge and five to represent an excellent level of

knowledge. If a participant checked between two numbers, the researcher used the lower of the two numbers for data collection purposes. One (2%) survey was missing the years of experience information, seven (14%) were missing the information about the age group they were serving, and only one (2%) did not indicate level of interest in serving the infants, toddlers, and preschool age group (N=50).

Descriptive Statistics of the Demographic Data

Assuming that the data collected by the survey reflect the conference population, the following information was revealed regarding the participants. Thirty-nine participants (78%) were females and 11 (22%) were males (N=50). Eighteen of the females (36%) were between 31-40 years old and 20 of them (40%) were 41-50 years old (N=50). Twenty-six (52%) of the participants had a Bachelor's degree, 23 participants (46%) had a Master's degree, and none had a doctorate (N=50). Seventeen (34.7%) participants had one to five years of experience in the adapted physical education field and the same percentage (34.7%) had more than 10 years of experience in this field (N=49). Twenty-seven (68%) participants served primarily the kindergarten to 8^{th} grade population (N=43). However, 55.9% of this group

also served at least 11 infants, toddlers, and preschool students in addition to their primary group.

The majority 40 (80%) of the participants had an APE credential (N=50). Thirty-three (67.3%) of the professionals who answered the survey, were very interested in serving the infants, toddlers, and preschool age group (N=49). About 50% (23) of the professionals had pre-service and/or in-service training and about 50% had no training (N=50) (Appendix D).

Descriptive Statistics of the Perceived Competence Ratings

In analyzing the data, a score of one, equalled the poorest knowledge and a score of five, equalled excellent knowledge of an item. For the purposes of this discussion, a score of one will be described as poor. A score of two will be described as fair. A score of three will be described as average. A score of four will be described as good and a score of five will be described as excellent.

The greatest frequency of poor ratings was given to the item 'medications most commonly prescribed to infant, toddler, and preschool children with disabilities and their related contraindications' (#3c). Twenty-one specialists (42%) indicated poor knowledge of this skill another 17

specialists (34%) described their knowledge of this item as fair, 11 specialist (22%) described themselves as having an average knowledge in this area, and only one specialist (2%) rated as having a good knowledge in this area (N=50).

The item about "Neonatal/intensive care assessment techniques and medical apparatus" (#2e) indicated that 23 respondents (47.9%) had poor knowledge in this area, and another 12 respondents (25%) rated their knowledge in this area as fair (N=48). For the item related to the 'process of accessing and obtaining professional family counseling' (#3g), 19 respondents (38%) rated their knowledge in this area as fair on the scale, and another 14 respondents (28%) rated themselves as having poor knowledge in this area (N=50). For the item related to "management skills necessary to lead or provide assistance to families of infants, toddlers, and preschool children with disabilities" (#3h), 23 respondents (46%) described their knowledge as fair while another 11 respondents (22%) indicated that they had poor knowledge in this area (N=50).

For the item related to "proper nutrition, feeding, and environmental health factors necessary in creating IFSPs" (#2q), 18 respondents (36%) rated themselves as

having fair knowledge in this area. Another 13 respondents (26%) rated themselves as having poor knowledge in this area (N=50). For the item related to "accessing professional/legal assistance for due process" (#3f), 17 respondents (34%) rated themselves as having poor knowledge in this area, and another 14 respondents (28%) as having average knowledge according to the scale (N=50).

As a general pattern, it appears that the lowest ratings were concentrated in the section concerning family counseling and consulting knowledge base. Items related to counseling, resources, advocacy, abuse and medical knowledge of infants, toddlers, and preschool students with disabilities and their families rated considerably lower than other items and their sections on the survey.

At the end of each section of the survey, there was an item asking the participants to rate their level of knowledge in the specific area. For the item related to the legal and public policy knowledge base (#1e), ten (20.4%) participants rated themselves as having a poor level of understanding toward infant, toddler, and preschool legal and public policy knowledge base, 13 (26.5%) participants rated themselves as having a fair level of understanding,

another 13 (26.5%) participants rated themselves as having an average level of understanding, and another ten (20.4%) participants rated themselves as having a good level of understanding. Only three (6.1%) participants rated themselves as having an excellent level of understanding in this area (N=49).

For the item related to a scientific infants, toddlers, and preschoolers knowledge base (#2r), 18 (36%) of the participants rated themselves as having an average level of understanding toward this area of knowledge, 16 (32%) participants rated themselves as having a fair level of understanding toward this area of knowledge, eight (16%) participants rated themselves as having a poor level of application, another eight (16%) rated themselves as having a good level of application in this area of knowledge and none (0%) rated themselves as having an excellent level of knowledge in this area(N=50). For the item related to the level of application toward infants, toddlers, and preschoolers family counseling and consulting knowledge base (#3i), 20 (40%) participants rated themselves as having a fair understanding of this area of knowledge, 18 (36%) of them rated themselves as having a poor level of

understanding, nine (18%) as having an average level of understanding, and three (6%) as having a good level of understanding in this area. None (0%) rated themselves as having an excellent level of understanding toward infants, toddlers, and preschooler's family counseling and consulting knowledge base (N=50) (Appendix E.).

Factor Analysis

"Factor analysis is a statistical technique used to reduce a set of data by grouping similar variables into basic components" (Thomas & Nelson, 1996, p. 184). For this study, a total of 32 items have been used to identify the knowledge and perceived level of competence of adapted physical education specialists in providing services to the infants, toddlers, and preschool population. To group the items according to the correlation between them, a factor analysis had been used.

The factor analysis (Varimax rotation) of the responses to Likert items generated seven factors. A factor matrix and reliability (Alpha) of factors are illustrated in Table 3. Out of the seven factors, only four factors were retained for future analysis based on factor loadings (which showed items comprising a factor was related and did

not "co-load") and good (Alpha≥.70) reliability. The factors were labeled "scientific knowledge" (Alpha=.90, Variance=14.78%), "counseling resources" (Alpha=.90, Variance=14.06%), "medical issues" (Alpha=.85, Variance=9.43%), and "motor development Knowledge" (Alpha=.86, Variance=8.96%) [Table 1].

The four factors have a cumulative variance of 47.23%. The remaining three factors have a variance of 8.49%, 8.39%, and 6.57%, and so the contribution of adding an additional factor from this set was not significant. Thus, it had been decided not to use them for further analysis.

Table 1

Factor Matrix and Reliability Scores (Coefficient Alpha)

Factor	Item #	Factor loading	Alpha
SCIENTIFIC KNOWLEDGE	2k	.56	
	2l	.86	
	2m	.86	
	2n	.61	
	2p	.62	.90
COUNSELING RESOURCES	3a	.66	
	3b	.79	
	3f	.79	
	3h	.67	.90
MEDICAL ISSUES	3c	.62	
	3d	.85	
	3e	.62	
	3g	.35	.85
MOTOR DEVELOPMENT	2a	.78	
	2b	.85	
	2c	.56	.86

Note. Reliability of all factors: Alpha = .91

Correlation

Intercorrelation is a technique to determine the relations between variables within a factor and between factors in order to determine the content validity and the reliability of the factors (Thomas & Nelson, 1996). In this study, the correlation within each factor was strong for most of the data used. For the first and primary factor,

"scientific knowledge", the data demonstrated an interrelationship of .38, which is a moderate correlation, at only one relationship of items. The rest were in a range from .60 to .91, which indicates a moderate to very strong correlation (Table 2).

Table 2

Factor 1: Scientific Knowledge (Intercorrelation of Items)

	1	2	3	4	5
1. Strategies for relaxation (#2k)	-	.68	.63	.38	.61
2. Strategies for socialization (#2l)		-	.91	.63	.62
3. Strategies for play behavior (#2m)			-	.68	.63
4. Behavior modification strategies (#2n)				-	.60
5. Movement prescription for home base and parent lesson(#2p)					-

For the second factor, "counseling resources", the data were in the range of .56 to .83, which demonstrates a moderate to strong correlation, and indicates that the items within the factor represented a good fit (Table 3).

Table 3

Factor 2: Counseling Resources (Intercorrelation of Items)

	1	2	3	4
1. Awareness of agency resources (#3a)	-	.83	.56	.72
2. Awareness of advocacy skills (#3b)		-	.70	.74
3. Accessing professional/legal assistance (#3f)			-	.76
4. Management skills to lead and provide Services to families (#3h)				-

Examining the third factor "medical issues", the data were in the range of .48 to .72. The data demonstrated moderate to strong correlation of the variables within the factor, illustrated in Table 4. One of the items, "process of accessing & obtaining professional family counseling" (#3g), also demonstrated a very strong individual intercorrelation (.60 to .82) with the other variables of Factor 2 (Table 4).

Table 4

Factor 3: Medical Issues (Intercorrelation of Items)

	1	2	3	4
1. Process of accessing & obtaining professional family counseling (#3g)	-	.52	.59	.63
2. Common medication for ITP children with disabilities (#3c)		-	.62	.48
3. Concepts related to death & dying (#3d)			-	.72
4. Child abuse, neglect, maternal drug dependency (#3e)				-

The fourth factor, "motor development knowledge", included only three variables and its item intercorrelates in the range of .53 to .82. The data demonstrate a moderate to strong correlation within the factor items, which indicates that the items within the factor represent a good fit (Table 5).

Table 5

Factor 4: Motor Development Knowledge (Intercorrelation of Items)

	1	2	3
1. Developmental milestones (#2a)	-	.82	.53
2. Developmental delays characteristics (#2b)		-	.67
3. Neurological foundation of motor control (#3c)			-

The intercorrelation of the items within each factor shows a very strong relationship, demonstrating that they related well to each other with a good fit.

CHAPTER 5

Discussion & Conclusions

The purpose of this research study was to determine the current perceived level of competence adapted physical education specialists' possess toward their service delivery to infant, toddler, and preschool children with disabilities.

The *Infants, Toddlers, and Preschoolers APE Standards Survey* used for this study was adapted from a questionnaire utilized by Megginson and Morgan in their unpublished research in 1996. This survey was based on Cowden and Eason (1991) 25-item pediatric adapted physical education competencies (Appendix F). Those competencies were representing four professional areas of knowledge: legal and public policy; scientific knowledge base and assessment principles; prescriptive and curriculum skills; and family counseling and consulting. Megginson and Morgan (1996) found in their study only 3 areas on knowledge, and they developed a 29-item survey depicting the fundamental competencies associated with infant, toddler, and preschool APE specialists.

Changes to the Megginson and Morgan (1996) survey were

made for the purpose of this study. The changes were to some of the demographic information and to some of the 32 perceived competence rating data items. Three hundred and fifty surveys were distributed to participants at the 30th National Conference on Physical Activity for the Exceptional Individual. Of the 350 surveys distributed to the conference population, 50 were returned.

The data analysis revealed demographic information regarding the professionals providing APE services, their level of training and the specific populations they serve. The results of the survey also revealed information about the respondents' knowledge in a variety of domains and, specifically, in their perceived level of competence in serving infant, toddler, preschool children with disabilities.

The data of the study indicated that most of the specialists in this profession were women between the ages of 31-50 years old. Most of the participants were relatively new to the field (having one-five years of experience), or had been in the field for 10 or more years. Very few respondents (six) fell in the six to 10 years of experience category. The above data would indicate that

many participants most likely attended the conference to gain new knowledge because of their newness to the field and relatively little experience. Those having over 10 years of experience most likely attended to review new trends, educational approaches, current research and continuing education in the field. If utilizing the respondents at the conference who chose to participate in the study as reflective of the professional population, the following is observed: most of them work within the school system and serve primarily the kindergarten through eighth grade age group, with most of these also serving some infants, toddlers, and preschool children with disabilities. This is the primary reason for their high level of interest in learning more about providing services to this age group. Also, only about 50% (23 specialists) of these respondents have training specific to the infants, toddlers, and preschool population which implies that they do not have the knowledge and experience necessary to appropriately serve this population effectively.

When all participants' responses (N=50) were accounted for, a factor analysis extracted seven factors from the data. Good reliability (Alpha $\geq$ .70) was found on factors

one through four of the total factors. The first four factors were comprised and retained for future analysis. The four factors retained were labeled: 1) scientific knowledge, 2) counseling resources, 3) medical issues and 4) motor development knowledge. These factors are different from the ones predicted by Cowden and Eason (1991) and later used by Megginson and Morgan (1996), and so give a different view of the infant, toddler, preschool APE competencies.

Megginson and Morgan (1996) identified three separate domains of knowledge in their research that was based on Cowden and Eason (1991) competencies for infant, toddler, and preschool APE specialists. The three domains were legal and public policy knowledge base, scientific infants, toddlers, and preschoolers knowledge base, and family counseling and consulting knowledge base. A factor analysis of the current study's data demonstrated that the standards actualy grouped into seven factors. Of these factors, the top four were selected for the study's analysis. These four factors included only one (scientific knowledge) of the three initial categories identified by Megginson and Morgan (1996) that were used on the survey for this study. The

four factors that came up from this study were: scientific knowledge, counseling resources, medical issues, and motor development. The four original domains identified by Cowden and Eason (1991) were legal and public policy, scientific knowledge base and assessment principles, prescriptive and curriculum skills, and family counseling and consulting.

When reviewing the data collected for the three initial categories that were developed by Megginson and Morgan (1996) and used for this survey it appeared as if APE specialists perceived as having the lowest level of knowledge in the area of family counseling and consulting. The data also revealed that most APE specialists did not have enough in-service and pre-service training in the area of infant, toddler, and preschool adapted physical education. From these two points, it can be concluded that most of the training is needed in the area of family counseling and consulting, and medical knowledge of infant, toddler, and preschool children with disabilities.

In order to learn more and further evaluate the appropriate service delivery of infant, toddler, and preschool APE specialists in the future, the survey needs to be modified to reflect the new results. After adapting

the survey to the new results, it is recommended that the survey be applied to a larger population base of APE specialist's nation wide. This data will give a more expansive view of the national inservice and preservice training needs of the APE specialist in developing appropriate professional competencies for surving the infant, toddler, and preschool population with disabilities.

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APPENDIX A. Consent Form

Date _____

I, _____ agree to participate in the research project entitled Adapted Physical Education Specialists' Perceived Competence in Providing Services to Infants, Toddlers and Preschoolers, to be conducted by Inbar Levin B. Ed. at San Jose State University under the direction of Dr. Nancy Megginson. The procedures have been explained to me and I understand them. They are as follows: the purpose of the study is to better understand the Adapted Physical Education specialists who serve infants and toddlers with disability. The tasks involve voluntarily and anonymously, answering a questionnaire during the time of the conference, which includes answering 8 demographic questions, and 27 more questions about 3 subjects: legal and public policy knowledge, scientific infants, toddlers, and preschool Children with Disability knowledge base and skills, and family counseling and consulting knowledge and skills. The questionnaire will be returned to the researcher at the end of the last event of the conference. I understand that this consent and data may be withdrawn at any time without penalty. I have been given the right to ask questions, and my questions if any, have been answered to my satisfaction. I understand the data will be reported in group form and individual data will be kept confidential.

_____ _____

Subject Signature Date

APPENDIX B. The Survey

Infants, Toddlers, and Preschoolers (ITP) APE Standards Survey

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This survey is design for Adapted Physical Educators (APE) working with young children and adults with special needs and their families. The survey asks specific questions regarding your background, pre-service and in-service training, current job placement, and program practices. In addition, you will be asked to rate your perceived level of professional competence in the area of Infants, Toddlers, Preschoolers (ITP) APE. Thank you for your cooperation and participation in this study.

Section 1: Please check the background questions that apply to you.

My Current job title is (please complete): _____

Gender
- ☐ Male
- ☐ Female

Age
- ☐ Under 30
- ☐ 30-40
- ☐ 41-50
- ☐ 51-60
- ☐ Over 61

Highest degree earned (area of study)
- ☐ Associate _____
- ☐ Bachelor _____
- ☐ Masters _____
- ☐ Doctorate _____
- ☐ Other _____

How long have you been an APE specialist?
- ☐ Less than 1 year
- ☐ 1-5 years
- ☐ 6-10 years
- ☐ More then 10 years

Your current age group primarily served (only one)
- ☐ Infants/Toddlers/Preschoolers(ITP)
- ☐ Primary school (K-8)
- ☐ Secondary school (9-12)
- ☐ Community college
- ☐ University
- ☐ Other _____

If you did not indicate ITP as your primary group, how many ITP children do you serve?
- ☐ 1-5 children
- ☐ 6-10 children
- ☐ more then 11

Your level of interest in providing services to children 0-5 years old with disabilities:
- ☐ Very interested
- ☐ Somewhat interested
- ☐ Not at all interested

Have you had pre-service ITP APE training?
- ☐ Yes
- ☐ No

Have you had any in-service ITP APE training?
- ☐ Yes
- ☐ No

Do you have APE Specialist Credential?
- ☐ Yes
- ☐ No

Section 2:
Directions: Below is a list of 5 best Practices in ITP APE and some key quality indicators that reflect each one. On a scale of 1-5, please rate the current status of each indicator of your skills and/or knowledge base.

1. Legal and Public Policy Knowledge Base

	1=Poor -5=Excellent 1	2	3	4	5
a. PL 99-457 The Education of the Handicapped Act Amendment of 1986.					
b. PL 105-17 The Individuals with Disabilities Education Act of 1997					
c. The name and functions of all recommended disciplines of the Transdisciplinary team that provides direct and indirect services to infants, toddlers, and preschool (ITP) children with disabilities.					
d. Public policy and corresponding interagency facilitators for PL 105-17					
e. Rate your current level of application toward ITP legal and public policy knowledge base.					

2. Scientific ITP Knowledge Base

	1=Poor -5=Excellent 1	2	3	4	5
a. Developmental milestones of children ages 0-5.					
b. Developmental delay characteristics associated with ITP children with disabilities.					
c. Neurological foundation of motor control.					
d. Assessment process for determining the least restrictive environment placement for the 0-5 population.					
e. Neonatal/intensive care assessment techniques and medical apparatus.					
f. Curriculum and judgment-based assessment techniques (e.g. reflex analysis, mobility, flexibility, sensory motor strengths/weaknesses, gross/fine motor skills, position/handling techniques, postural analysis, and object pursuit).					
g. Formal assessment instruments and screening tools (e.g. Apgar scores, Bayley Scales of Infant Development, Brigance, Early Intervention Profile, HELP, Milani-Comparetti Motor Development Screening Test, and Peabody Developmental Motor Scale).					
h. Techniques for orthotic devices (e.g. placing and removing, specialized seating, positioning, adaptive equipment, and mobility apparatus).					
i. Curriculum sequences in motor development (e.g. strengths, muscle control, tone, tactile integration, vestivular stimulation, visual pursuit, object permanence, and spatial concepts).					
j. Appropriate response-contingent toys/materials for sensory stimulation and physical/motor development.					
k. Strategies for relaxation.					
l. Strategies for socialization.					
m. Strategies for play behavior.					
n. Behavior modification strategies for noncompliant/inappropriate behaviors.					
o. Management strategies for directing Individual Family Service Plans (IFSPs) including their transition to IEPs at the appropriate age.					
p. Movement prescriptions for home-based and parent lessons to enhance ITP children with disabilities physical growth and development.					
q. Proper nutrition, feeding, and environmental health factors necessary in creating IFSPs					
r. Rate your current level of application toward scientific ITP knowledge base.					

3. Family Counseling and Consulting Knowledge Base

	1=Poor -5=Excellent 1	2	3	4	5
a. Awareness of agency resources to promote and maintain the rights of all persons regarding care provisions for home, school, and community environment.					
b. Awareness of advocacy skills to promote and maintain the rights of all persons regarding care provisions for home, school, and community environment.					
c. Medications most commonly prescribed to ITPCD and their related contraindications.					
d. Concepts related to death and dying.					
e. Issues related to child abuse, neglect, and maternal drug dependency.					
f. Accessing professional/legal assistance for due process.					
g. Process of accessing and obtaining professional family counseling.					
h. Management skills necessary to lead or provide assistance to families of ITP children with disabilities.					
i. Rate your current level of application toward ITP family counseling and consulting knowledge base.					

APPENDIX C. Approval from Human Subjects Review Board

San José State
UNIVERSITY

Office of the Academic Vice President
Associate Vice President Graduate Studies and Research
One Washington Square
San Jose, CA 95192-0025
Voice: 408-283-7500
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E-mail: gradstudies@wahoo.sjsu.edu
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To: Inbar Levin
513 Hope Terrace #4
Sunnyvale, CA 94087

From: Nabil Ibrahim,
AVP, Graduate Studies & Research

Date: November 8, 2001

The Human Subjects-Institutional Review Board has approved your request to use human subjects in the study entitled:

> "Adapted PE *[Physical Education]* Specialists' Perceived Competence toward ITPCD *[Infant Toddler Preschooler Children with Disabilities]* Service Delivery."

This approval is contingent upon the subjects participating in your research project being appropriately protected from risk. This includes the protection of the anonymity of the subjects' identity when they participate in your research project, and with regard to any and all data that may be collected from the subjects. The approval includes continued monitoring of your research by the Board to assure that the subjects are being adequately and properly protected from such risks. If at any time a subject becomes injured or complains of injury, you must notify Nabil Ibrahim, Ph.D. immediately. Injury includes but is not limited to bodily harm, psychological trauma, and release of potentially damaging personal information. This approval for the human subjects portion of your project is in effect for one year, and data collection beyond November 7, 2002 requires an extension request.

Please also be advised that all subjects need to be fully informed and aware that their participation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subject's participation, refusal to participate, or withdrawal will not affect any services that the subject is receiving or will receive at the institution in which the research is being conducted.

If you have any questions, please contact me at (408) 924-2480.

APPENDIX D. Descriptive Statistics of the Demographic Data

Variable	N	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Gender	50	Male 11	22	Female 39	78						
Age	50	≥ 30 9	18	30-40 18	36	41-50 20	40	51-60 3	6	≤61 0	0
Degree	50	Asso 1	2	BA 26	52	MA 23	46	PhD 0	0	Other 0	0
Experience	49	≥ 1 y 5	10.2	1-5 y 17	34.7	6-10y 10	20.4	≤ 10y 17	34.7		
Age-group served	43	ITP 6	14	K-8 27	62.8	9-12 5	11.6	Univ. 1	2.3	Other 4	9.3
ITP children served	34	1-5 10	29.4	6-10 5	14.7	≤ 11 19	55.9				
Interest serving ITP	49	Very 33	67.3	Some 12	24.5	Not 4	8.2				
Pre-service Training	50	Yes 23	46	No 27	54						
In-service Training	50	24	48	26	52						
Credential	50	40	80	10	20						

APPENDIX E. Descriptive Statistics of the Perceived Competence Rating Data

Variable	N	Rating 1		2		3		4		5	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
PL 99-457 of 1986	50	3	6	5	10	18	36	19	38	5	10
PL 105-17 of 1997	50	3	6	4	8	13	26	20	40	10	20
Recommended disciplines	50	6	12	8	16	14	28	13	26	9	18
Public policy & Corresponding PL 105-17	50	5	10	18	36	11	22	15	30	1	2
Developmental Milestones	50	1	2	7	14	8	16	21	42	13	26
Developmental delays Characteristics	50	2	4	8	16	9	18	21	42	10	20
Neurological foundation Of motor control	49	4	8.2	5	10.2	11	22.4	15	30.6	11	22.4
Neonatal/intensive care assessment & medical apparatus	48	23	47.9	12	25	8	16.7	4	8.3	1	2.1
Curriculum & judgment based Assessment techniques	49	5	10.2	9	18.4	18	36.7	13	26.5	4	8.2
Formal assessment & screening tools	49	4	8.2	13	26.5	15	30.6	12	24.5	5	10.2
Orthotic devices	50	10	20	9	18	17	34	9	18	5	10
Curriculum sequences in motor development	50	2	4	12	24	11	22	18	36	7	14
Toys for sensory stimulation & motor development	48	4	8.3	11	22.9	15	31.3	11	22.9	7	14.6
Strategies for relaxation	49	3	6.1	8	16.3	21	42.9	12	24.5	5	10.2
Socialization strategies	50	2	4	7	14	15	30	17	34	9	18
Play behavior strategies	50	2	4	5	10	13	26	17	34	13	26
Behavior modification strategies	49	1	2	4	8.2	18	36.7	14	28.6	12	24.5
Management strategies for IFSP & Transition to IEP	49	9	18.4	18	36.7	11	22.4	10	20.4	1	2
Movement prescription for Home base & parent lesson	50	9	18	16	32	12	24	9	18	4	8
Nutrition, feeding, & Environmental health	50	13	26	18	36	11	22	7	14	1	2
Awareness of agency resources	50	11	22	15	30	14	28	7	14	3	6
Awareness of advocacy skills	50	9	18	17	34	13	26	8	16	3	6
Common medications for ITP children with disabilities	50	21	42	17	34	11	22	1	2	0	0
Concepts related to death & dying	50	20	40	11	22	10	20	8	16	1	2
Child abuse, neglect & maternal drug dependency	50	9	18	12	24	16	32	10	20	3	6
Accessing professional/legal assistant	50	17	34	8	16	14	28	9	18	2	4
Process of accessing & obtaining professional family counseling	50	14	28	19	16	10	20	6	12	1	2
Management skills to serve families	50	11	22	23	46	10	20	6	12	0	0
Levels of ITP legal and public policy knowledge	49	10	20.4	13	26.5	13	26.5	10	20.4	3	6.1
Level of scientific ITP knowledge	50	8	16	16	32	18	36	8	16	0	0
Level of ITP family counseling & consulting knowledge	50	18	36	20	40	9	18	3	6	0	0

APPENDIX F. Infants, Toddleres, and Preschoolers Adapted Physical Education Competencies

Legal and Public Policy

The Pediatric APE teacher will have the knowledge of…

1. PL 99-457, The Education of the Handicapped Act Amendments of 1986, and PL 101-476, Individuals with Disabilities Education Act of 1990.
2. The names and functions of all recommended disciplines of the multidisciplinary team that provides direct and indirect services to infants, toddlers, and preschool children with disabilities.
3. The public policy and corresponding interagency facilitator for PL 101-476.
4. Management skills necessary to lead or provide assistance to families of infants, toddlers, and preschool children with disabilities.
5. Agency resources and advocacy skills to promote and maintain the rights of all persons in regard to care provisions for home, school, and community environments.

Scientific Knowledge Base and Assessment Principles

The pediatric APE teacher will have the knowledge of…

6. The developmental milestones of children birth through age five and be able to identify developmental delays characteristics of infants, toddlers, and preschool children with disabilities.
7. The neurological basis of motor control.
8. Proper nutrition, feeding, and environmental health factors necessary for creating Individual Family Service Plan (IFSP).
9. Commonly presacribed medications and related contradictions.
10. The assessment process for determining the least restrictive environment regarding the 0-5 populations.
11. The assessment techniques used in neonatal/intensive care and medical apparatus.
12. Curriculum based and judgment based assessment techniques to include reflex analysis, mobility,

flexibility, sensory motor strengths and weaknesses, gross motor and fine motor skills, positioning/handaling techniques, postural analysis, and object pursuit.

13. Standardized assessment and screening instruments to include the Apgar scores, Bayley Scales of Infant Development, Brigance, Early Intervention Profile, Milany- Comparetti Motor Development Screening Test, and the Peabody Developmental Motor scales.

The pediatric APE teacher will be able to perform…

14. Pediatric first aid and CPR techniques.
15. Techniques for orthotic devices (removing and replacing), specialized seating, positioning, adaptive apparatus, and mobility apparatus.

Prescriptive and Curriculum Skills

The pediatric APE teacher will be able to write and/or teach…

16. Curriculum sequences in motor development including strength, muscle control, tone, tactile integration, vestibular stimulation, visual pursuit, object permanence, and spatial concepts.
17. Appropriate response-contingent toys/materials for sensory stimulation and physical and motor development.
18. Strategies for relaxation, socialization, and play behavior.
19. Behavior modification strategies for eliminating or reducing noncompliant or inappropriate behavior.
20. Management strategies for directing the IFSP with transition to an Individual Education Plan (IEP) at appropriate age.

Family Counseling and Consulting

The pediatric APE teacher will be able to counsel and/or consult families…

21. Concerning concepts related to death and dying.
22. With issues related to child abuse, neglect, and maternal drug dependency.
23. To gain professional/legal assistance for due process.
24. To gain information and directions for obtaining professional counseling.
25. To carry out movement prescriptions for home based and

parent lessons for engancing physical growth and development.